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049400

JUL 16 1997



Mr. E. R. Skinnarland
200 Area Section Manager
State of Washington
Department of Ecology
1315 West 4th Avenue
Kennewick, Washington 99336-6018

Dear Mr. Skinnarland:

DATA QUALITY OBJECTIVE (DQO) SUMMARY REPORT FOR THE PROPOSED ROAD AND UTILITY CROSSING AT THE 216-A-29 DITCH

The U.S. Department of Energy, Richland Operations Office (RL) and the State of Washington Department of Ecology (Ecology) have completed the DQO process for the road and utility crossing at the 216-A-29 Treatment, Storage, and Disposal (TSD) waste site. Attached is the DQO Summary Report, signed by the RL and Ecology decision makers. Also attached is HNF-SD-TWR-TI-005, Rev. 0, Soil/Sediment Characterization for the 216-A-29 Ditch report that was developed in association with the DQO process. The Tank Waste Remediation System (TWRS) Privatization project is finalizing budgetary and funding allocations for the TWRS Privatization project, one component of which is the sampling activities specified in the attached DQO Summary Report. Once the timing of the sampling activities is established, RL will inform Ecology of the schedule to perform the sampling at the 216-A-29 Ditch crossing. RL appreciates Ecology's willingness to work together to develop the most appropriate solution to the problem of getting emergency access and utilities to the privatization project site. RL looks forward to working with Ecology further during the sampling of the 216-A-29 Ditch crossing.

If you have any questions, please contact me at 376-7087.

Sincerely,

Bryan L. Foley, Project Manager
Remedial Actions Project

RAP:BLF

Attachments

cc w/attach:
R. Parazin, NHC
Z. Maine-Jackson, Ecology
G. Mitchem, BHI

**Data Quality Objectives
Summary Report for the
Proposed Road and
Utility Crossing at the
216-A-29 Ditch**



DATA QUALITY OBJECTIVES SUMMARY REPORT FOR THE PROPOSED ROAD AND UTILITY CROSSING AT THE 216-A-29 DITCH

Bechtel Hanford, Inc.
Richland, Washington

Zelma Maine-Jackson, Washington Department of Ecology, Unit Manager

Belma Maine-Jackson 5 / 20 / 97
Signature Date

Bryan L. Foley, U.S. Department of Energy, Unit Manager

Stephen J. Kelly 5 / 20 / 97
Signature Date

Thomas R. Hoertkorn, U.S. Department of Energy, Unit Manager

Bruce Reynolds for 5 / 20 / 97
Signature Tom Hoeitkorn Date

1.0 INTRODUCTION

The Project Hanford Management Contractor (PHMC) is proposing to install a roadway and utilities in the 200 East Area to support technology demonstrations as part of the Tank Waste Remediation Systems (TWRS) projects. The remediation of tank wastes is undergoing privatization; the private contractors will be onsite in the future to demonstrate their technologies in the old grout facility area. The PHMC has the task of readying the site for the demonstrations, including providing access roads and utilities. The PHMC is currently performing engineering studies for determining alternatives to meet their objectives on this project. One potential alternative is to cross the 216-A-29 Ditch, a *Resource Conservation and Recovery Act* (RCRA) treatment, storage, or disposal (TSD) unit currently slated for cleanup by the Environmental Restoration Contractor (ERC). The road and utility crossing will be constructed and become operational before the RCRA closure of the 216-A-29 Ditch.

The data quality objectives (DQO) process is the methodology used to determine required actions to allow crossing of the 216-A-29 Ditch. This summary report documents the DQO process for the potential crossing of the 216-A-29 Ditch to provide access to the TWRS privatization project. The DQO process was conducted in December 1996 and January 1997.

The DQO process consisted of a pre-meeting, a site tour, and two formal DQO meetings. The DQO process started with a compilation of existing information to support the DQO discussions. An information package was prepared and distributed at the pre-meeting. The meetings culminated in a decision for future actions, which is the basis of this summary report.

2.0 MAJOR PARTICIPANTS

The major participants in the DQO process were the decisions makers from the Washington State Department of Ecology (Ecology) and the U.S. Department of Energy, Richland Operations Office (DOE-RL). Other Ecology, DOE-RL, and site contractor personnel contributed to the DQO process. Table 1 lists the participants and their respective roles in the process.

3.0 FACILITY HISTORY AND DESCRIPTIONS

3.1 TWRS PRIVATIZATION

DOE-RL is privatizing the treatment of mixed waste currently stored in Hanford tanks. The first phase of the privatization is a proof of concept to demonstrate treatment capabilities with some associated waste treatment while the second phase is full production for waste treatment. For

Phase I, the Grout Disposal Site was selected for demonstration facilities. DOE-RL has committed to providing the infrastructure to the two privatization contractors including an access road, raw and sanitary water, and liquid effluent transfer lines. Engineering studies recommended crossing the 216-A-29 Ditch to provide this infrastructure. Crossing the 216-A-29 Ditch is the preferred option for the following reasons:

- least environmental impact
- most direct route for the utilities
- separate construction access for each contractor
- minimized potential to contact contamination
- reduced need to route utilities through congested corridors.

The road and utility crossing is currently scheduled to be constructed the spring and summer of 1999. The crossing must be in service by the time the privatization contractors are ready to mobilize construction forces, currently scheduled to be in the late 1990s or early 2000. This schedule precedes the projected closure of the 216-A-29 Ditch.

3.2 216-A-29 DITCH

The 216-A-29 Ditch is located east of the 200 East Area in the central portion of the Hanford Site (Figure 1). The 216-A-29 Ditch was an excavated unlined ditch located east of the Plutonium/Uranium Extraction (PUREX) Plant in the southeast corner of the 200 East Area (Figure 2). The ditch was approximately 1.8 m wide at the bottom and 1,097 m long. The depth of the ditch varied from 0.6 to 0.9 m at the south end to approximately 4.6 m at the north end. The discharge to the ditch was a pipeline outfall located approximately 270 m inside of the east perimeter fence line of the 200 East Area. The ditch passed beneath the perimeter fence and extended northeast to join the 216-B-3 Ditch system which flowed into the 216-B-3 Pond.

The ditch was first used in 1955 at the startup of the PUREX Plant. All discharges to the ditch originated in the PUREX Plant and were carried to the ditch via the Chemical Sewer Line (CSL). Flow from the PUREX Plant CSL was continuous and varied from 950 to 2,000 L/min depending upon the PUREX Plant operating status. Chemical and radiological analytical data for the ditch effluent are listed in detail in the *PUREX Plant Chemical Stream-Specific Report* (WHC 1990).

On July 15, 1991, discharges to 216-A-29 were discontinued and the effluent from the PUREX Plant CSL was rerouted to the PUREX Plant Cooling Water Line. The ditch was subsequently backfilled and the site contoured and revegetated as an interim stabilization measure. A description of the stabilization activities are given in *216-A-29 Ditch Interim Stabilization Final Report* (WHC 1991). This interim stabilization completed Milestone M-17-10 of the *Hanford Federal Facility Agreement and Consent Order* (Ecology et al. 1994).

4.0 ISSUES AND DECISIONS

The two major issues addressed in the DQO were:

- 1) Can TWRS install a roadway and utilities over the 216-A-29 Ditch to support their project?
- 2) If yes, what is required by Ecology to allow the crossing?

Other issues and decisions developed out of these two major issues, such as number, location, and depth of samples and contaminants of concern (COC). These issues are discussed in more detail later in this summary report.

4.1 SUPPORTING INFORMATION

As part of the DQO process, an information package was prepared for review by all participants. This package included information from existing reports and diagrams, site databases, and personnel interviews. Two major sources of information were the *Soil/Sediment Characterization for the 216-A-29 Ditch* (Rust 1997) and *216-A-29 Ditch Interim Stabilization Final Report* (WHC 1991).

In 1988, as part of the 216-A-29 site characterization activities, an initial sampling effort took place. This sampling resulted in the collection of 14 sediment samples from 10 separate locations along the 216-A-29 Ditch. The COC for this sampling effort were radionuclides (total alpha, total beta, cesium-137, cobalt-60, total uranium), metals (strontium, zinc, barium, cadmium, chromium, lead, nickel, copper, mercury, arsenic, and selenium), and organic compounds. Reductions in funding precluded this work from continuing and the sample data were archived. As part of this DQO process, the data were retrieved and the characterization report was developed (Rust 1997). Figure 3 shows the location of the samples from this sampling effort.

As described in the characterization report, a hand auger was used to collect sediments from the channel surface to a depth of 30 cm at each sample location. Whenever possible, a second sample was collected to the greatest depth the auger could penetrate, usually between 60 to 90 cm. Samples to depth were only collected at sites 1, 2, 3, and 9 (Figure 3). The proposed crossing location is in the closest proximity to sampling sites 7, 8, and 9, with site 8 being within 30 m of the crossing location.

The 1988 sampling and analysis were done using SW-846 standards with the associated validation. However, the validation for the 1988 sampling would not comply with the current RCRA/ *Comprehensive Environmental Response, Compensation and Liability Act* (CERCLA) quality assurance/quality control standards.

Copies of the 1988 data were provided to DQO participants for their review. Based on this review, the data were deemed usable for this decision process. Any additional data needs identified in the DQO would use these data as the basis for sampling depths, COC, and other data collection parameters.

4.2 ISSUES

The following topics were identified as a means of addressing all aspects associated with the 216-A-29 Ditch in the DQO Process:

1. Regulatory
 - a. crossing/filling a TSD under interim status
 - b. future remediation influence/impact/final closure
 - c. future characterization/additional data needs
 - d. fill material quality
2. Engineering Design/Construction/Operations
 - a. interruption of site access and utilities
 - b. worker safety/exposure
 - c. additional data needs
3. Sampling Issues
 - a. ability to intersect old channel bed
 - b. sampling locations
 - c. number of sampling locations
 - d. sampling depths
 - e. COC
 - f. COC detection limits
 - g. sample analysis
 - h. quality assurance/quality control.

Security measures would be required at the road and utilities crossing at the 216-A-20 Ditch; some additional sampling would be required to confirm the 1988 data and to demonstrate that no new conditions have developed since the previous sampling effort. Security measures would include fencing and signage designed to meet both ERC's Radiological Control procedures (HSRCM 1996) and RCRA requirements. The form of the fencing would not be specified by Ecology or RCRA regulatory requirements but would be left up to DOE and its contractors to meet standard Hanford Site requirements.

At this time, the proposed crossing at the 216-A-29 Ditch provides the highest degree of worker safety because it avoids the congestion in the center of 200 East Area and the more contaminated areas associated with alternate routes. However, because this route is through a TSD facility that received hazardous waste, further sampling is required at and upstream of the proposed crossing location. These samples are to be used to assure worker safety during the construction and to

verify the results of the 1988 sampling events. The sampling details and parameters are summarized in Table 2 while Figure 4 shows the sampling depths at each site and the changes taking place at the proposed road bed.

Participants discussed the fact that any data collected now will not necessarily satisfy the requirements for clean closure of the ditch. Some future characterization of the ditch as part of the closure activities may be required. However, pending evaluation of the sampling results. Ecology (as the lead regulatory agency) does not expect DOE will be required to do any additional characterization or remediation in the vicinity of the constructed road crossing that would be destructive in nature as a result of the closure activities at the 216-A-29 Ditch. No additional discussion was considered warranted on this because, based on existing data, the sampling will not likely identify unacceptable levels of contaminants.

Since the 216-A-29 Ditch was stabilized and back-filled in 1991 (thus covering the old channel bed), a concern was raised regarding the ability to locate the old channel bed. A detailed topographic map (Figure 5) of the facility was completed before it was stabilized. Locating a borehole that would intersect the bottom of the channel would not be a problem given the detail of the topographic map.

4.3 AGREEMENTS AND DECISIONS

Table 3 summarizes the agreements made in the DQO meetings as summarized in the previous sections.

5.0 CONCLUSIONS

Data collected as a result of this DQO process will be used to validate the earlier data collected, to support Ecology's decision to allow crossing of the ditch, to support DOE-RL's decision on any remedial action at the road site prior to construction, and to augment the closure of the ditch in the future. The data may also be used in ongoing projects such as the 200 Area Remediation Strategy and individual operable unit evaluations. Data will be captured in the Hanford Environmental Information System.

6.0 REFERENCES

- Ecology, EPA, and DOE-RL. 1994. *Hanford Federal Facility Agreement and Consent Order, Fourth Amendment*. Washington Department of Ecology. Olympia. Washington. U.S. Environmental Protection Agency, Region X. Seattle. Washington. and U.S. Department of Energy, Richland Operations Office. Richland. Washington.
- HSRCM. 1996. *Hanford Site Radiological Control Manual*. HSRCM-1. Rev. 2. Bechtel Hanford, Inc., Westinghouse Hanford Company, Pacific Northwest Laboratory, and Hanford Environmental Health Foundation. Richland. Washington.
- Rust. 1997. *Soil/Sediment Characterization for the 216-A-29 Ditch*. HNF-SD-TWR-TI-005. Rev. 0. Rust Federal Services. Northwest Operations. Richland. Washington.
- WHC. 1990. *PUREX Plant Chemical Sewer Stream-Specific Report*. WHC-EP-0342. Addendum 2. Westinghouse Hanford Company. Richland. Washington.
- WHC. 1991. *216-A-29 Ditch Interim Stabilization Final Report*. WHC-SD-DD-TI-060. Rev. 0. Westinghouse Hanford Company. Richland. Washington.

Figure 1. Hanford Site

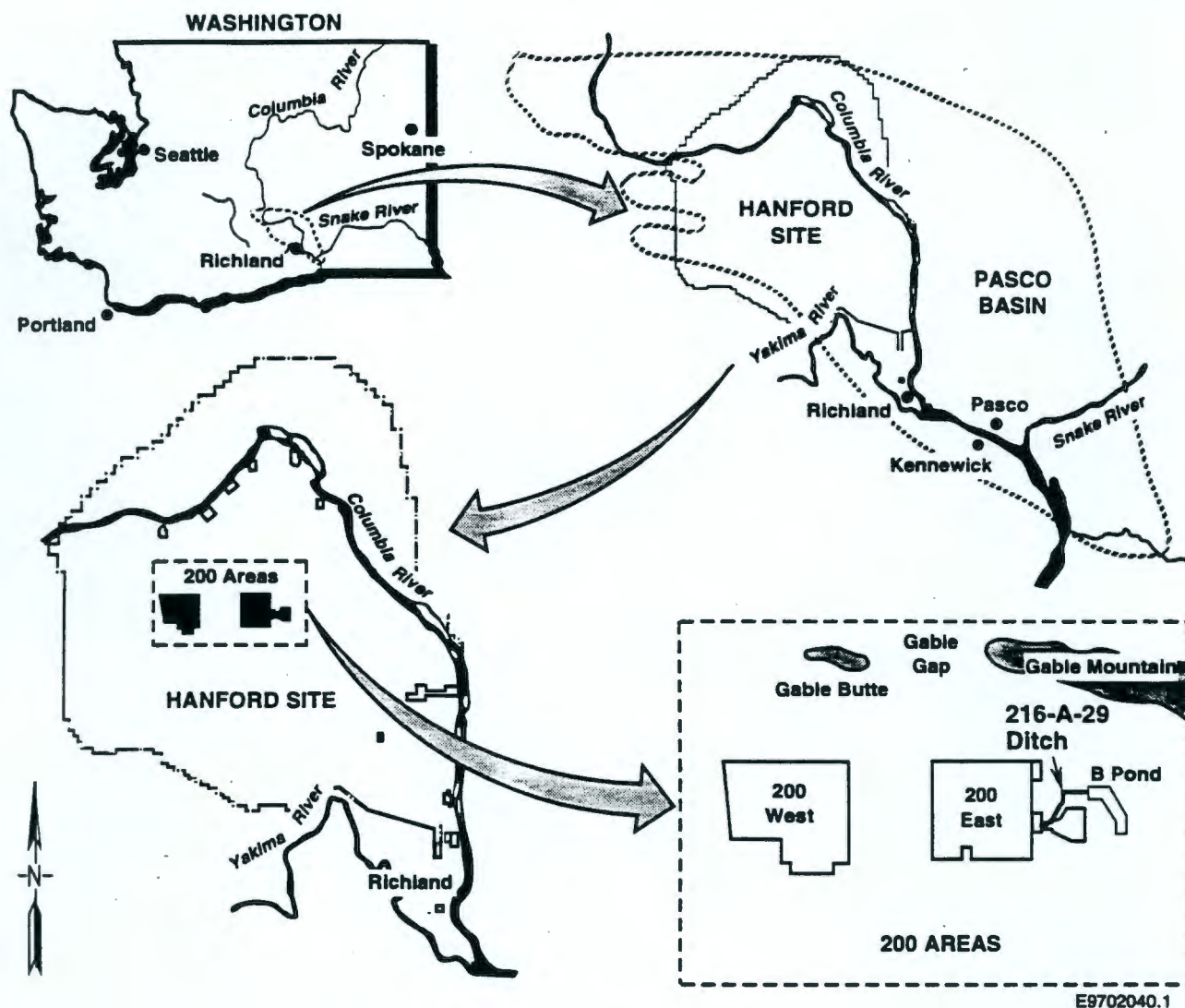
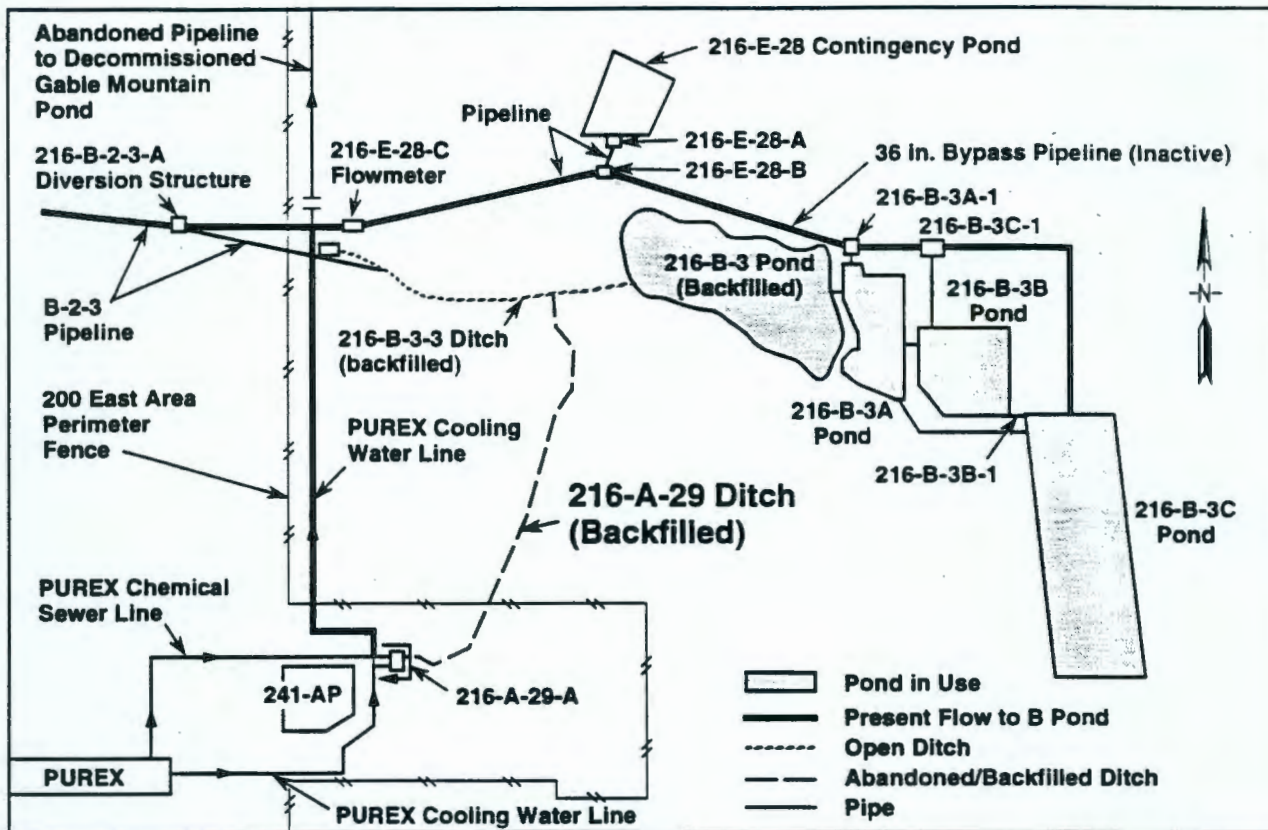


Figure 2. 216-A-29 Ditch



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Figure 3. Locations for 1988 Sampling of the 216-A-29 Ditch

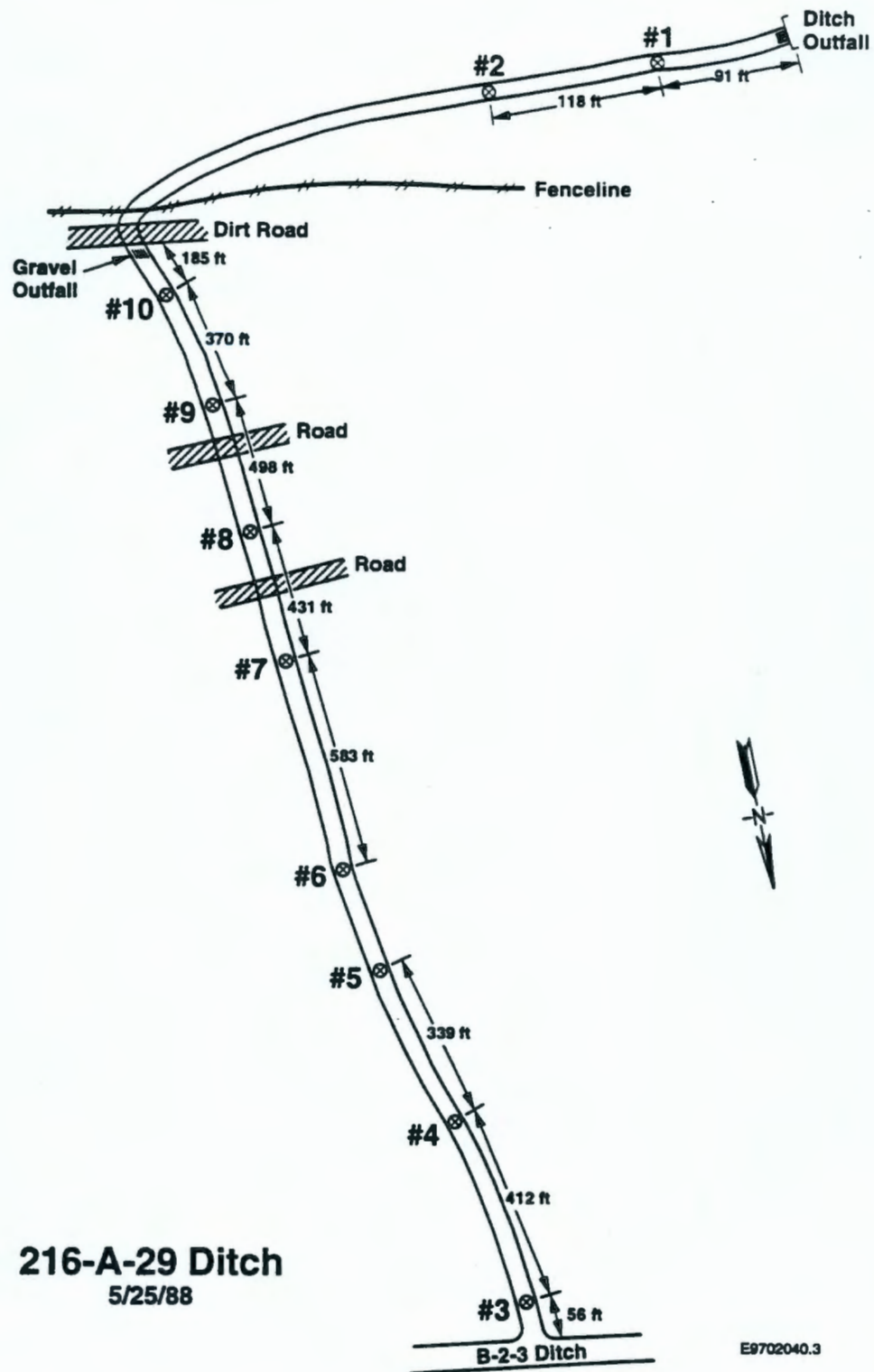
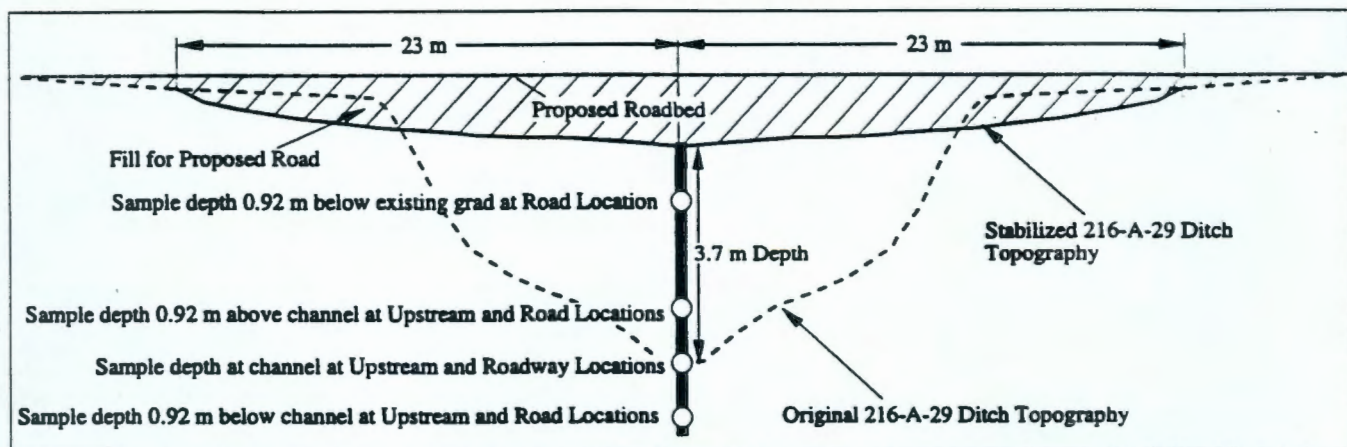


Figure 4. Cross-Section of the 216-A-29 Ditch Showing Sampling Depths and Proposed Changes at the Road Crossing.



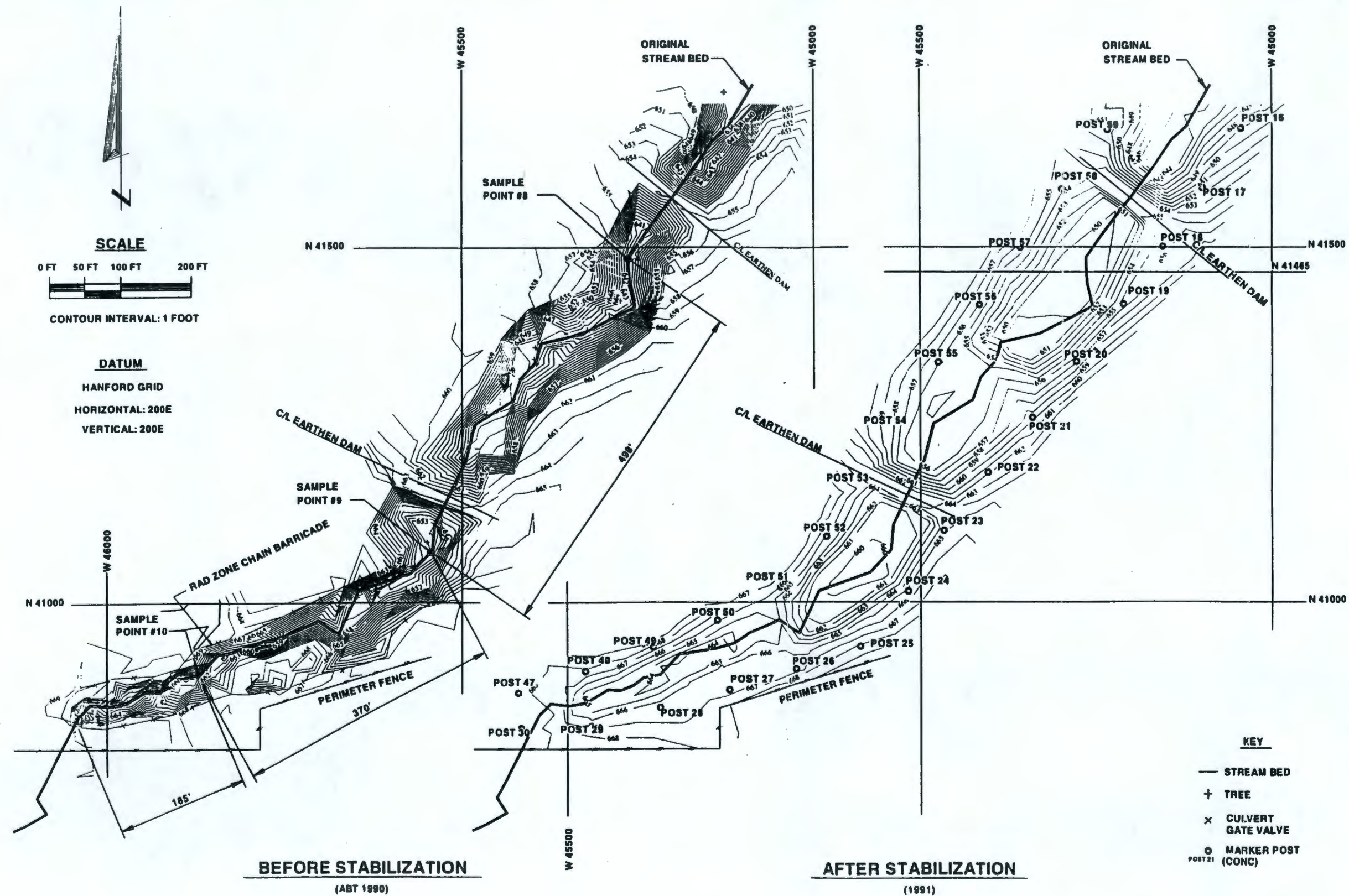


Figure 5. Topographic Map of the 216-A-29 Ditch Before and After Interim Stabilization

Table 1. DQO Process Participants and Their Respective Roles.

Participants	Role	Company
Zelma Jackson	Decision Maker	Department of Ecology
Jerry Yokel	Support	Department of Ecology
Bryan Foley	Decision Maker	Department of Energy
Tom Hoertkorn	Decision Maker	Department of Energy
Greg Mitchem	Support	Bechtel Hanford, Inc. (ERC)
Roger Ovink	DQO Facilitator	CH2MHill Hanford, Inc. (ERC)
Michael Connelly	Support	CH2MHill Hanford, Inc. (ERC)
Dave Fort	Support	Flour Daniel Northwest (PHMC)
A. R. (Ray) Johnson	Support	Rust Federal Services, Inc. (PHMC)
Ron Mitchell	Support	Rust Federal Services, Inc. (PHMC)
Al Shord	Support	Numatec Hanford Corporation (PHMC)
Mary Todd	Support	IT Hanford, Inc. (ERC)

Table 2. Summary of Sampling Issues and Parameters

Sample Location	Sample Depths	Contaminants of Concern	Detection Limits	Sample Analysis	Quality Assurance/ Quality Control
Proposed Roadway and Utilities Conduit	8" above the hard pan or channel bottom 3' below the channel bottom 3' below current surface 3' above channel bottom	Cobalt-60 Cesium-137 Strontium-90 RCRA Metals Semi-volatiles with tics	MTCA B	Laboratory	Standard QA Package Department of Health Split Splits/Duplicates/Reps
Upstream Site	8" above the hard pan or channel bottom 3' below the channel bottom 3' above channel bottom	Cobalt-60 Cesium-137 Strontium-90 RCRA Metals Semi-volatiles with tics	MTCA B	Laboratory	Standard QA Package Department of Health Split Splits/Duplicates/Reps

Table 3. DQO Agreement Summary

Number	Agreement
1	Proposed crossing of 216-A-29 Ditch is most appropriate location to meet the needs of the TWRS privatization project
2	Security measures will be incorporated into the design of the road to meet both RCRA and Radiological Control requirements; the type/style of fencing is up to DOE and the contractors.
3	Additional sampling will be required to allow crossing of the ditch (details of sampling will be addressed in the Sampling and Analysis Plan)
4	Sampling will not be required downgradient of the proposed road location.
5	Sampling will be done beneath the roadway and upstream of the roadway. Site 8 from the previous sampling will be one sample site. The other sample site will be determined by a subsequent site visit.
6	Samples will be taken at four intervals at the roadway sample location and three intervals at the upstream location, per Figure 4.
7	Analysis will be performed by an offsite laboratory with MTCA B detection limits and standard QA/QC.
8	Contaminants of concern are the radionuclides cobalt-60, cesium-137, and strontium-90; RCRA metals; and semi-volatile organics
9	Pending results of the sampling, no additional characterization or remediation will be required at the constructed crossing site as part of the TSD closure process. ¹

¹Final agreement on this matter cannot occur until after the sampling results have been evaluated by the decision makers.

Data Quality Objectives for the Proposed Road and Utility Crossing at the 216-A-29 Ditch

Meeting Minutes

DQO for TWRS Crossing at 216-A-29

January 9, 1997

Meeting Minutes

The first DQO meeting for the 216-A-29 Ditch TWRS crossing was convened at 12:00 pm on January 9, 1997. The following is a list of attendees:

<u>NAME</u>	<u>ORGANIZATION</u>	<u>PHONE</u>
Bryan Foley	DOE-RL	376-7087
Dave Fort	FDNW	376-4250
Zelma Jackson	Ecology	736-3024
Ron Mitchell	RKT	376-5122
Greg Mitchem	BHI	372-9632
Roger Ovink	CHI	372-9631
Al Shord	NHC	376-1990
Mary Todd	ITH	372-9678

The meeting started with an agreement by all parties that the 216-A-29 Ditch crossing represents the best option for the TWRS project needs. However, several thorny regulatory issues exist and may require additional information to address.

The first portion of the meeting was an indepth presentation by Ron Mitchell of the data collected in 1988 at the A-29 Ditch. The data report was provided as part of the information package distributed at the pre-meeting. This presentation was a more detailed look at the data in relation to the proposed crossing. The following is a synopsis of this presentation:

The proposed crossing was in closest proximity to sampling sites 7, 8, and 9 with site 8 being within 100 ft of the crossing location. The head end of the ditch, near PUREX, had a high flow rate and a deeper, narrower channel. As the ditch meandered toward the B-3 Pond, the flow rate slowed and the channel widened, then the flow rate increased again due to terrain with an associated deepening and narrowing of the channel. Figures 2 through 5 show an analysis of the two highest values for each constituent in relation to their sampling location.

Site 8 had a reading of 100 pCi/g of cesium-137 and the only detectable PCB hit at 1.2 ppm (detection limit was 1.0 ppm) of Arochlor 1254. Data for the other sites was discussed along with some of the data uncertainties. This information is included in the data report (Rust 1997) and on the attached figures.

The sampling was done the same at both 216-A-29 and 2101-M Pond. 2101-M Pond was recently clean-closed through additional verification sampling. The sampling and analysis were done using SW-846 standards with associated validation; however, the validation would not comply with the current RCRA/CERCLA quality assurance/quality control standards. Details of the sampling are found in the data report (Rust 1997).

Following the presentation on the data, discussions centered on the issues. The following issues were identified:

1. Regulatory
 - a. Crossing/filling a TSD under interim status
 - b. Future remediation influence/impact/final closure
 - c. Future characterization/additional data needs
 - d. Fill material quality
2. Engineering Design/Construction/Operations
 - a. Interruption of site access and utilities
 - b. Worker safety/exposure
 - c. Additional data needs

Item a under regulatory issues:

Zelma stated that crossing the ditch was not really a problem but that security measures would be required. Further discussions resulted in an agreement that security measures for the road crossing the ditch, such as fencing and signage, would be included in the design to meet both RadCon and RCRA requirements. An Action Item was given to Zelma to identify Ecology's security requirements for the road crossing the ditch.

Item b and c under regulatory issues and item a under engineering design/construction/operations:

Discussions concerning future remedial influence and impacts centered around potential future actions. Plausible options included clean closure through additional sampling efforts or through removal and disposal to cleanup levels. No effort was made to prejudge the final closure option. The future characterization/closure of the ditch and the interruption of site access are tied together. Zelma stated that any sampling now will not satisfy the requirements for clean closure at this time. Prior to closure, an approved closure plan must be in place; the closure plan for the 216-A-29 Ditch is not scheduled until sometime in the future around the year 2000. Further discussions revolved around a risk management decision on DOE's part. For example, if sampling of the ditch for the road access results in data points below regulatory concern, then the road presents little risk to future activities at the ditch and a reasonably small risk of having to relocate the road during closure of the TSD. However, if sampling indicates some constituents at potentially unacceptable levels, then the risk of having to move the roadway and interrupt TWRS operations is higher. In this instance, some removal of material prior to construction of the access road may be warranted.

Item d under the regulatory issues was deferred. All parties agreed that the material must be clean to regulatory standards or cleanup levels, as appropriate.

Items b and c under engineering design/construction/operations:

Discussions centered around the proposed route providing the highest degree of worker safety because it avoids the congestion in the center of 200 East Area and also avoids more contaminated areas associated with alternate routes. Generally, everyone was in agreement that this proposed crossing at the 216-A-29 Ditch is the best option to meet the needs of the TWRS privatization. Dave Fort stated there is no need for additional characterization for the installation of the road on the part of the TWRS privatization project. Sufficient information, in the form of physical soil properties, has been collected over the years to support their efforts.

In summary, the results of the discussion associated with these issues are that Ecology will require some sampling in order to support the proposed crossing of the ditch. An agreement was reached that no sampling would be required downstream of the proposed road location; however, sampling of the area under the proposed road would be necessary. Ecology requested samples be taken upgradient of the road location to provide information on potential lateral migration and to provide comparison values with the existing data. The number of samples, sample locations, sample depths, and analyte lists were deferred to a future meeting after Ecology has time to review and interpret the existing data. An Action Item was given to Ron Mitchell and Mary Todd to get the data to Zelma by Friday, January 17.

The next meeting will be on Tuesday, January 14, at 12:00 pm and will begin with a tour of the 216-A-29 Ditch.

The pre-meeting minutes (12/11/96) are still undergoing review by all the attendees.

DQO for TWRS Crossing at 216-A-29 Ditch
Agreement Summary
(1/9/97)

Number	Agreement
1	Proposed crossing of 216-A-29 Ditch is most appropriate location to meet the needs of the TWRS privatization project
2	Security measures will be incorporated into the design of the road to meet both RCRA and RadCon requirements
3	Additional sampling will be required to allow crossing of the ditch (details of sampling will be determined in future DQO meeting)
4	Sampling would not be required in the downgradient side of the proposed road location.

**216-A-29 Ditch DQO
Action Item List
(1/9/97)**

No.	Action	Responsibility	Status
1	Provide TWRS Privatization Schedule	Bob Parazin	Complete
2	Review DQO Information Package	All participants	Complete
3	Provide issues associated with crossing of 216-A-29 Ditch	Ecology (Zelma Jackson)	Complete
4	Schedule 1st DQO Meeting	Mary Todd	Complete
5	Identify security requirements for crossing the 216-A-29 Ditch	Zelma Jackson	TBD
6	Provide data package to Zelma	Ron Mitchell Mary Todd	January 17

DQO for TWRS Crossing at 216-A-29 Ditch
January 29, 1997
Meeting Minutes

The second DQO meeting for the 216-A-29 Ditch TRWS crossing was convened at 8:00 AM on January 29, 1997. The following is a list of attendees:

<u>NAME</u>	<u>ORGANIZATION</u>	<u>PHONE</u>
Michael Connelly	CHI	372-9301
Bryan Foley	DOE-RL	376-7087
Dave Fort	FDNW	376-4250
Zelma Jackson	Ecology	736-3024
A.R. (Ray) Johnson	RFS-NW	372-0356
Greg Mitchem	BHI	372-9632
Roger Ovink	CHI	372-9631
AL Shord	NHC	376-1900
Mary Todd	ITH	372-9678
Jerry Yokel	Ecology	736-3024

Old Business

Summary of the site tour - On January 14, 1997, the participants of the DQO process toured the 216-A-29 Ditch. Ron Mitchell served as guide and basically recreated the sampling event from 1988. He showed the group where samples were taken and described the ditch at the time in terms of terrain, vegetation, roadways, etc. Only the upper portion of the ditch was toured because the road alongside the ditch was too rough for the vehicles.

A topic and associated action item from the first meeting was the requirement for fencing of the road to prevent intrusion. Zelma Jackson had the action to identify and report the Ecology/RCRA requirements for fencing. Zelma reported that the only requirement was that fencing be implemented. The form of the fencing would be left to DOE and the contractors (i.e., the type of fencing would not be specified by Ecology or regulatory requirements). Table 1, the action item list, gives the status of action items from the last meeting and includes new action items identified from this meeting.

New Business

The meeting started with Dave Fort handing out a detailed topographic map of the portion of 216-A-29 Ditch where TRWS crossing will be located. This map showed the topography of the ditch before and after stabilization at 1-ft contour intervals. Locating a borehole that would intersect the bottom of the streambed would not be a problem given the detailed topographic survey maps before stabilization.

After passing out the detailed topographic map, the following sampling issues were discussed

1.) Sample Location

Discussions resulted in agreement that sampling should take place at sample Site 8 and upstream in the area of Sites 9 and 10; a downstream sample does not need to be taken.

A discussion followed on whether or not the upstream sample should be placed between Sites 9 and 10 or at either site 9 or site 10. The concern was comparing a sample taken from between sites 9 and 10 to the results found at sites 9 and 10 from the earlier sampling. This issue was deferred to the Sampling and Analysis Plan.

2.) Number of Sampling Locations.

Two sampling locations were deemed to be adequate: one at the road crossing location (approximately Site 8 from the previous sampling effort) and one upstream of the crossing.

3.) Sampling Depths

For the sample to be taken at the road crossing location, the following parameters were identified:

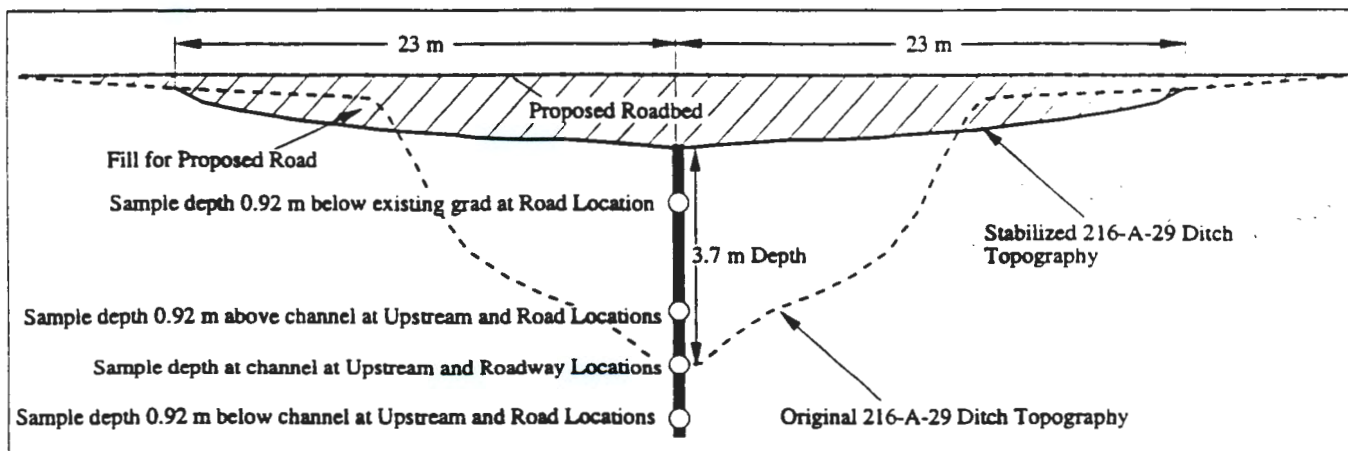
- The channel horizon should be sampled.
- 3 ft below the old channel should be sample. However, a discussion followed on the necessity of this sample if the reported cobble ("hard-panned") layer halted drilling. An agreement was reached that this sample is necessary and that appropriate equipment should be used to ensure penetrating this layer.
- A sample 3 ft from the surface should be taken to provide information on the backfill material (the old sides of ditch were pushed in to stabilize the area).
- A sample 3 ft above the channel bottom should be taken. A discussion centered on the purpose of the sample 3' above the channel. A question was raised on use of the results from this sample to indicate upward migration of contaminants. The group agreed that the sample results could not be used to differentiate between contaminated fill at the time of interim stabilization or upward contaminant migration. The sample will only give an indication of contamination of the fill material.

For the sample to be taken upstream from the road crossing:

- Samples will be taken at the channel horizon, 3 ft below the channel, and 3 ft below the surface.

Figure 1 shows the sampling depths at each site and the proposed changes taking place at site 8. Site 9 on this figure means the upstream site

Figure 1. Sampling Locations and Depths



4.) Contaminants of Concern (COC)

The contaminants of concern would be the RCRA metals, the radionuclides cesium-137, cobalt-60 and strontium-90, and semi-volatile organics.

5.) COC Detection Limits

MTCA-B detection limits would be used.

6.) Sample Collection Method

The following sample collection methods were discussed: Cone penetrometer, hand auger, borehole, and test pits. Discussions concluded that this is not part of the DQO and should be left to the Sampling and Analyses Plan.

7.) Sample Analysis

Both field screening or laboratory analyses were discussed. Field screening would not meet the MTCA-B standards; therefore, the samples will be sent to a laboratory with complete documentation and chain of custody

8.) Quality Assurance/Quality Control

A standard data validation would be performed (i.e. Splits, Duplicates and Replicates). A Washington State Department of Health sample could serve as a QA sample to help reduce costs.

Table 2 summarizes the sample details from the meeting.

Table 3 is the list of agreements reached at this meeting.

**Table 1. Action Item List
(1/29/97)**

No.	Action	Responsibility	Status
1	Provide TWRS Privatization Schedule	Bob Parazin	Complete
2	Review DQO Information Package	All participants	Complete
3	Provide issues associated with crossing of 216-A-29 Ditch	Ecology (Zelma Jackson)	Complete
4	Schedule 1st DQO Meeting	Mary Todd	Complete
5	Identify security requirements for crossing the 216-A-29 Ditch	Zelma Jackson	Complete
6	Provide data package to Zelma	Ron Mitchell Mary Todd	Complete
7	Arrange for additional field trip.	Mary Todd	Week of February 3
8	Prepare estimate of sampling and analysis costs based on DQO agreements	Mary Todd	Week of February 3
9	Prepare meeting minutes and DQO summary report	Mary Todd Mike Connelly	Week of February 3
10	Review and comment on all meeting minutes	Everyone	Prior to final DQO Summary Report

Table 2. Summary of Sampling Parameters

Sample Location	Sample Depths	Contaminants of Concern	Detection Limits	Sample Analysis	Quality Assurance/ Quality Control
Site 8	8" above the hard pan or channel bottom 3' below the channel bottom 3' below current surface 3' above channel bottom	Cobalt-60 Cesium-137 Strontium-90 RCRA Metals Semi-volatiles with tics	MTCA B	Laboratory	Standard QA Package Department of Health Split Splits/Duplicates/Reps
Site 9/10	8" above the hard pan or channel bottom 3' below the channel bottom 3' below current surface	Cobalt-60 Cesium-137 Strontium-90 RCRA Metals Semi-volatiles with tics	MTCA B	Laboratory	Standard QA Package Department of Health Split Splits/Duplicates/Reps

**Table 3. Agreement Summary
(1/29/97)**

Number	Agreement
1	Proposed crossing of 216-A-29 Ditch is most appropriate location to meet the needs of the TWRS privatization project
2	Security measures will be incorporated into the design of the road to meet both RCRA and RadCon requirements
3	Additional sampling will be required to allow crossing of the ditch (details of sampling will be determined in future DQO meeting)
4	Sampling would not be required in the downgradient side of the proposed road location.
5	Fencing is required; however, the type/style of fencing is up to DOE and the contractors.
6	Sampling will be done beneath the roadway and upstream of the roadway. Site 8 from the previous sampling will be one sample site. The other sample site will be determined by a subsequent site visit.
7	Samples will be taken at four interval at the roadway sample location and three intervals at the upstream location, per the figure in these meeting minutes.
9	Analysis will be performed by an offsite laboratory with MTCA B detection limits and standard QA/QC.
10	Contaminants of concern are the radionuclides cobalt-60, cesium-137, and strontium-90; RCRA metals; and the semi-volatile organics identified as hits in the original sampling effort

Soil/Sediment Characterization for the 216-A-29 Ditch

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management